

CLAIMS

1 An actuation system for a plurality of electrically actuated devices, comprising a pulsed light-source of variable pulse frequency directed to a plurality of actuation gateways; each gateway being adapted to supply an actuation voltage above a threshold-value to an associated device when illuminated by light pulsed at a trigger frequency for that device; each said gateway comprising photovoltaic converter means for converting pulsed incident light to a pulsed electric current of corresponding frequency; and each said gateway comprising frequency-sensitive transformer means for transforming the voltage of the pulsed current to a higher voltage above the threshold value for the associated device when the current frequency is at a trigger frequency.

2. A system according to claim 1 wherein the transformer means comprises a ferroelectric transformer and the trigger frequency is a resonant frequency of that transformer.

3. A system according to claim 1 or claim 2 wherein the output voltage of the photovoltaic converter means is 3 to 5 volts.

4. A system according to claim 1, claim 2 or claim 3 wherein the higher voltage is 600 to 800 volts.

5. . A system according to any one of the preceding claims in which the trigger frequency is a band of not more than about 3kHz within the range 10kHz-40kHz.

6 A system according to any one of the preceding claims in which the trigger frequencies of devices to be operated independently are separated by at least 3kHz.

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9) 7. A system according to any one of the preceding claims comprising optical pathway means for directing light from the light source to the plurality of actuation gateways.

5 8. A system according to claim 7 wherein the optical pathway means comprises a branched network of optical fibres connected by optical couplers.

9. A system according to claim 8 wherein the optical couplers provide optical power of 40 to 50mW to each actuation gateway.

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10. A method of actuating a plurality of electrical devices, comprising providing an actuation system for the said devices according to any one of the preceding claims, and selectively actuating a device by illuminating the actuation gateways with light pulsed at a frequency that corresponds to the trigger frequency of the
15 selected device.

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